CLAIMS

1. A method of operating a power system, the method comprising the steps of:

operating an internal combustion engine so as to produce an engine vacuum, and

advancing air through a fuel reformer with the engine vacuum.

2. The method of claim 1, further comprising the step of advancing a reformate gas produced by the fuel reformer to an intake of the engine with the engine vacuum.

3. The method of claim 2, further comprising the step of advancing the reformate gas produced by the fuel reformer to an emission abatement device.

4. The method of claim 2, wherein:

the reformate gas comprises a hydrogen-rich gas, and

the reformate gas advancing step comprises advancing the hydrogen-rich gas to the intake of the engine with the engine vacuum.

5. The method of claim 1, further comprising the step of advancing a reformate gas produced by the fuel reformer to an emission abatement device.

6. The method of claim 1, wherein:

the fuel reformer has an inlet and an outlet, and

the advancing step comprises generating a pressure drop across the fuel reformer from the inlet to the outlet with the engine vacuum.

7. The method of claim 1, wherein:

the fuel reformer comprises a plasma fuel reformer having an air inlet and a reformate gas outlet, and

the advancing step comprises generating an outlet pressure at the reformate gas outlet which is less than an inlet pressure at the air inlet.

8. The method of claim 1, wherein the fuel reformer comprises a plasma fuel reformer having a gas outlet, further comprising the step of advancing a reformate gas produced by the plasma fuel reformer from the gas outlet to an intake of the engine with the engine vacuum.

9. The method of claim 8, wherein:

the reformate gas comprises a hydrogen-rich gas, and

the reformate gas advancing step comprises advancing the hydrogen-rich gas from the gas outlet of the plasma fuel reformer to the intake of the engine with the engine vacuum.

10. The method of claim 1, wherein the advancing step comprises operating a turbocharger with the engine vacuum to advance air through the fuel reformer.

11. The method of claim 10, further comprising advancing a reformate gas produced by the fuel reformer to an emission abatement device.

12. A power system, comprising:

an internal combustion engine having an intake, wherein (i) the engine is operable in an actuated mode of operation, and (ii) an engine vacuum is present at the intake when the engine is operated in the actuated mode of operation, and

a fuel reformer having an outlet fluidly coupled to the intake, wherein the engine vacuum causes air to be advanced through the fuel reformer when the engine is operated in the actuated mode of operation.

13. The power system of claim 12, wherein the engine vacuum further causes reformate gas from the fuel reformer to be advanced from the outlet of the fuel reformer to the intake of the engine when the engine is operated in the actuated mode of operation.

14. The power system of claim 13, wherein the reformate gas comprises hydrogen.

15. The power system of claim 12, wherein:

the fuel reformer has an inlet, and

the engine vacuum generates a pressure drop across the fuel reformer from the inlet to the outlet when the engine is operated in the actuated mode of operation.

16. The power system of claim 12, wherein the fuel reformer comprises a plasma fuel reformer.

17. A method of operating a power system, the method comprising the steps of:

operating an internal combustion engine so as to produce an engine vacuum, and

advancing reformate gas from a fuel reformer to an intake of the engine with the engine vacuum.

18. The method of claim 17, wherein:

the fuel reformer has an outlet, and

the advancing step comprises generating a pressure drop across a conduit from the outlet of the fuel reformer to the intake of the engine with the engine vacuum.

19. The method of claim 17, wherein:

the fuel reformer comprises a plasma fuel reformer having a reformate gas outlet, and

the advancing step comprises generating an intake pressure at the intake of the engine which is less than an outlet pressure at the reformate gas outlet.

20. The method of claim 17, wherein:

the reformate gas comprises a hydrogen-rich gas, and

the advancing step comprises advancing the hydrogen-rich gas to the intake of the engine with the engine vacuum.